

SOUTHWEST CLEAN AIR AGENCY

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**AIR DISCHARGE PERMIT
08-2799R2**

Final Date: April 25, 2012

Facility Name: Sierra Pacific Industries
Physical Location: 3115 Kuper Road
Centralia, WA 98531

SWCAA ID: 2272

REVIEWED BY:


Paul T. Mairose, Chief Engineer



APPROVED BY:

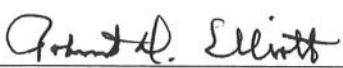

Robert D. Elliott, Executive Director

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1. Equipment/Activity Identification

ID No.	Generating Equipment/Activity	# of Units	Control Measure / Equipment	# of Units
1	Planer Mill	1	Total enclosure, baghouse (Carothers and Son)	1
2	Anti-Stain Treatment	1	Mist eliminator	1
3	Chip Bunker	3	Partial enclosure/wind screens	N/A
4	Sawdust Bunker	1	Partial enclosure/wind screens	N/A
5	Shavings Bunker	1	Partial enclosure/wind screens	N/A
6	Bark Bunker	1	Partial enclosure/wind screens	N/A
7	Nebraska Hog Fuel Boiler	1	One multiclone followed by a two-field ESP and SNCR	N/A
8	Dry Kilns	5	Process temperature limit	N/A

2. Approval Conditions

The following tables detail the specific requirements of this Permit. In addition to the requirements listed below, equipment at this facility may be subject to other federal, state, and local regulations. The permit requirement number is identified in the left hand column. The text of the permit requirement is contained in the middle column. The emission unit, equipment, or activity to which the permit requirement applies is listed in the right hand column.

This Permit will supersede Air Discharge Permit 08-2799R1 in its entirety.

2.1 Emission Limits

No.	Emission Limits	Equipment/ Activity																
1.	<p>Emissions from the Nebraska hog fuel boiler emitted through the multiclone, ESP and SNCR shall not exceed the following:</p> <table><tr><th>Pollutant</th><th>Emission Limit</th></tr><tr><td>NO_X</td><td>58.52 tpy, 90 ppmvd @ 7% O₂ (24-hr avg)</td></tr><tr><td>CO</td><td>105.35 tpy, 228 ppmvd @ 7% O₂ (24-hr avg)</td></tr><tr><td>PM/PM₁₀/PM_{2.5}</td><td>14.30 tpy, 0.015 gr/dscf @ 7% O₂ (1-hr avg) (filterable only)</td></tr><tr><td>Ammonia</td><td>5.81 tpy, 25 ppm @ 7% O₂ (24-hr avg)</td></tr><tr><td>Acetaldehyde</td><td>0.06 tpy</td></tr><tr><td>Acrolein</td><td>0.012 tpy</td></tr><tr><td>Formaldehyde</td><td>0.67 tpy</td></tr></table> <p>Emissions shall be calculated using the most recent emission test data for PM, CEM data for NO_X and CO, listed emission factors for HAPs, VOC and SO₂, and actual annual hours of operation consistent with the methodology in Section 6.d of the Technical Support Document for this Permit. Emissions from start up and shutdown processes are included in these annual limits.</p> <p>Compliance with the PM₁₀ limit above shall be demonstrated based on the average of three 1-hr tests.</p> <p>The short-term emission limits identified above (hourly or 24-hr averaging time) shall not apply during boiler start up and shutdown periods and periods of soot blowing/grate cleaning.</p>	Pollutant	Emission Limit	NO _X	58.52 tpy, 90 ppmvd @ 7% O ₂ (24-hr avg)	CO	105.35 tpy, 228 ppmvd @ 7% O ₂ (24-hr avg)	PM/PM ₁₀ /PM _{2.5}	14.30 tpy, 0.015 gr/dscf @ 7% O ₂ (1-hr avg) (filterable only)	Ammonia	5.81 tpy, 25 ppm @ 7% O ₂ (24-hr avg)	Acetaldehyde	0.06 tpy	Acrolein	0.012 tpy	Formaldehyde	0.67 tpy	7
Pollutant	Emission Limit																	
NO _X	58.52 tpy, 90 ppmvd @ 7% O ₂ (24-hr avg)																	
CO	105.35 tpy, 228 ppmvd @ 7% O ₂ (24-hr avg)																	
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Ammonia	5.81 tpy, 25 ppm @ 7% O ₂ (24-hr avg)																	
Acetaldehyde	0.06 tpy																	
Acrolein	0.012 tpy																	
Formaldehyde	0.67 tpy																	
2.	<p>Emissions from the lumber drying shall not exceed the following:</p> <table><tr><th>Pollutant</th><th>Emission Limit</th></tr><tr><td>VOC</td><td>85.00 tpy</td></tr><tr><td>PM/PM₁₀/PM_{2.5}</td><td>4.65 tpy</td></tr><tr><td>Acetaldehyde</td><td>10.50 tpy</td></tr><tr><td>Acrolein</td><td>0.18 tpy</td></tr><tr><td>Formaldehyde</td><td>0.19 tpy</td></tr><tr><td>Methanol</td><td>7.00 tpy</td></tr></table> <p>Emissions shall be calculated using actual annual material throughput and emission factors from Section 6.e of the Technical Support Document for this Permit.</p>	Pollutant	Emission Limit	VOC	85.00 tpy	PM/PM ₁₀ /PM _{2.5}	4.65 tpy	Acetaldehyde	10.50 tpy	Acrolein	0.18 tpy	Formaldehyde	0.19 tpy	Methanol	7.00 tpy	8		
Pollutant	Emission Limit																	
VOC	85.00 tpy																	
PM/PM ₁₀ /PM _{2.5}	4.65 tpy																	
Acetaldehyde	10.50 tpy																	
Acrolein	0.18 tpy																	
Formaldehyde	0.19 tpy																	
Methanol	7.00 tpy																	
3.	<p>Emissions from the anti-stain shall not exceed the following:</p> <table><tr><th>Pollutant</th><th>Emission Limit</th></tr><tr><td>VOC</td><td>1.70 tpy</td></tr></table> <p>Emissions shall be calculated based on actual material throughput consistent with the methodology in Section 6.b of the Technical Support Document for this Permit.</p>	Pollutant	Emission Limit	VOC	1.70 tpy	2												
Pollutant	Emission Limit																	
VOC	1.70 tpy																	

No.	Emission Limits	Equipment/ Activity								
4.	<p>Emissions from the Carothers and Son baghouse shall not exceed the following:</p> <table><tr><td><u>Pollutant</u></td><td><u>Emission Limit</u></td></tr><tr><td>PM/PM₁₀</td><td>11.26 tpy, 0.005 gr/dscf (1-hr avg)</td></tr><tr><td>PM_{2.5}</td><td>2.58 tpy</td></tr></table> <p>Emissions shall be calculated based on the maximum allowed emission concentration and actual annual hours of operation consistent with the methodology in Section 6.a of the Technical Support Document for this Permit.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	PM/PM ₁₀	11.26 tpy, 0.005 gr/dscf (1-hr avg)	PM _{2.5}	2.58 tpy	1		
<u>Pollutant</u>	<u>Emission Limit</u>									
PM/PM ₁₀	11.26 tpy, 0.005 gr/dscf (1-hr avg)									
PM _{2.5}	2.58 tpy									
5.	<p>Emissions from all bin unloading shall not exceed the following:</p> <table><tr><td><u>Pollutant</u></td><td><u>Emission Limit</u></td></tr><tr><td>PM</td><td>41.18 tpy</td></tr><tr><td>PM₁₀</td><td>24.71 tpy</td></tr><tr><td>PM_{2.5}</td><td>9.45 tpy</td></tr></table> <p>Emissions shall be calculated based on the actual annual throughput and emission factors consistent with the methodology in Section 6.c of the Technical Support Document for this Permit or alternate emission factors approved by SWCAA.</p>	<u>Pollutant</u>	<u>Emission Limit</u>	PM	41.18 tpy	PM ₁₀	24.71 tpy	PM _{2.5}	9.45 tpy	3-6
<u>Pollutant</u>	<u>Emission Limit</u>									
PM	41.18 tpy									
PM ₁₀	24.71 tpy									
PM _{2.5}	9.45 tpy									
6.	<p>Visible emissions shall not exceed the following values for more than 3 minutes in any one hour period as determined by a Certified Observer certified in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400) or determined by the continuous opacity monitoring system (COMS). The opacity limit for the Nebraska boiler does not apply during boiler start up and shutdown, and periods of soot blowing/grate cleaning.</p> <table><tr><td><u>Equipment</u></td><td><u>Opacity Limit</u></td></tr><tr><td>Nebraska Boiler</td><td>10%</td></tr><tr><td>Dry kilns</td><td>5%</td></tr><tr><td>All other approved equipment</td><td>0%</td></tr></table>	<u>Equipment</u>	<u>Opacity Limit</u>	Nebraska Boiler	10%	Dry kilns	5%	All other approved equipment	0%	1-8
<u>Equipment</u>	<u>Opacity Limit</u>									
Nebraska Boiler	10%									
Dry kilns	5%									
All other approved equipment	0%									

2.2 Operating Limits and Requirements

No.	Operating Limits and Requirements	Equipment/ Activity
7.	Reasonable precautions shall be taken at all times to prevent and minimize fugitive emissions from plant operations.	Facilitywide
8.	Operations that cause or contribute to a nuisance odor shall use recognized good practice and procedures to reduce these odors to a reasonable minimum.	Facilitywide
9.	Each pollution control device shall be operated whenever the processing equipment served by that control device is in operation with the exception of the ESP and SNCR during hog fuel boiler start ups. Control devices shall be operated and maintained in accordance with the manufacturer's specifications. Furthermore, control devices shall be operated in a manner that minimizes emissions.	1-7

No.	Operating Limits and Requirements	Equipment/ Activity
10.	Emission units identified in this Permit shall be maintained and operated in total and continuous conformity with the emission levels and operational requirements specified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.	1-8
11.	Exhaust gas from approved equipment shall be discharged vertically into the ambient air. Any device that obstructs or prevents vertical discharge while in operation is prohibited.	1, 2, 7, 8
12.	The Nebraska boiler shall only be fired on wood products. The Permittee shall employ work practices to assure that only clean fuel is combusted in the hog fuel boiler.	7
13.	A flow meter shall be installed and maintained operable to measure the ammonia usage of the SNCR system.	7
14.	A differential pressure gauge shall be installed and maintained to measure the pressure drop across filtration media in the Carothers and Son baghouse.	1
15.	The Carothers and Son baghouse shall be operated at all times when the planer is in use.	1
16.	Dry kilns are approved for use with Douglas fir, hemlock, and spruce lumber only. Lumber made of other wood species may be dried provided that the following information is furnished to SWCAA for review prior to the start of drying operations: (a) Identification of wood species to be dried; (b) Emission factors for the proposed wood species; and (c) Estimated amount of wood to be dried. Approval by SWCAA of additional wood species does not increase or modify in anyway the emission limit established in Requirement 2 of this Permit.	8
17.	The dry-bulb set point temperature of the dry kilns shall not exceed 180°F.	8
18.	Dry kiln doors shall be kept closed at all times during active drying operations.	8
19.	Wood waste loadout bins shall have full length side wind barriers as well as shrouding/curtains on the ends to reduce fugitive particulate matter emissions.	3-6
20.	All VOC containing materials shall be collected in an enclosed container and not allowed to evaporate.	Plantwide
21.	The use of a street sweeper (or similar device such as a water truck) on paved roads shall be used weekly when significant rainfall has not occurred, or more frequently as needed, to minimize fugitive dust and to keep the log yard clean.	Plantwide

2.3 Monitoring and Recordkeeping Requirements

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
22.	With the exception of data recorded by an automated data acquisition system, each record required by this Permit shall include the date and the name of the person making the record entry. If a control device or process is not operating during a specific time period, a record shall be made to that effect.	1-8

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
23.	All records required by this Permit shall be kept for a minimum period of no less than five years and shall be maintained in a form readily available for inspection by SWCAA representatives.	1-8
24.	Excess emissions and upset conditions shall be recorded for each occurrence.	1-8
25.	A continuous emission monitoring system (CEMS) and data acquisition and handling system (DAHS) shall be installed to monitor emission concentrations and emission rates of opacity, NO _x , CO, and O ₂ from the Nebraska boiler. The CEMS/DAHS system shall be operated and maintained as described in Appendix B of this Permit. Minimum data availability shall be 90% or greater.	7
26.	<p>Hourly and 24-hour averages of the following data for the hog fuel boiler shall be recorded by the DAHS and kept readily available for on-site inspection:</p> <ul style="list-style-type: none"> (a) NO_x emission concentration (ppmvd @ 7% O₂) (b) NO_x emission rate (lb/hr) (c) CO emission concentration (ppmvd @ 7% O₂) (d) CO emission rate (lb/hr) (e) O₂ concentration (dry volume percent) 	7
27.	<p>Operational data for the ESP, SNCR, and Nebraska boiler shall be recorded as follows:</p> <ul style="list-style-type: none"> (a) Multiclone differential pressure Recorded daily (b) Secondary voltage in each ESP field Recorded daily (c) Current level in each ESP field Recorded daily (d) Spark rate in each ESP field Recorded daily (e) Ammonia consumption (lb/month) Recorded monthly (f) Hours of operation Recorded monthly (g) Boiler/ESP outlet temperature Recorded daily (h) Boiler steam flow rate Recorded continuously (i) Maintenance and repair activities Recorded for each occurrence (j) Emission testing/monitoring results Recorded for each occurrence (k) Oxygen level in boiler exhaust Recorded continuously (l) Periods of grate cleaning/soot blowing Recorded for each occurrence (m) CEMS calibration results Recorded for each occurrence (n) CEMS cylinder gas audit results Recorded for each occurrence (o) CEMS maintenance/repair activities Recorded for each occurrence 	7
28.	<p>Operational data for lumber drying activities shall be recorded and monitored as follows:</p> <ul style="list-style-type: none"> (a) Amount, species, and final moisture of dried lumber Recorded monthly (b) Emission testing results Recorded for each occurrence (c) Dry kiln average dry bulb temperature Monitored continuously during operation 	8
29.	<p>Operational data for the Carothers and Son baghouse shall be recorded as follows:</p> <ul style="list-style-type: none"> (a) Baghouse differential pressure Recorded weekly (b) Hours of operation Recorded monthly (c) Filter bag replacement Recorded for each occurrence (d) Emission testing results Recorded for each occurrence (e) Maintenance and repair activities Recorded for each occurrence 	1

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
30.	The amount and type of anti-stain product consumed shall be recorded monthly.	2
31.	The bone dry tons and type of wood waste unloaded from bins shall be recorded monthly.	3-6
32.	<p>SWCAA shall be notified at least seven days in advance of the use of any new material which will result in emissions of toxic air pollutants as defined in WAC 173-460 [effective 8/98] or hazardous air pollutants. The written notice shall include the following:</p> <ul style="list-style-type: none"> (a) A description of the proposed change(s) in materials with an MSDS for each new material, (b) The date the change(s) is (are) to be made, (c) The change(s) in emissions of VOCs, HAPs and TAPs occurring as a result of the change, and (d) A summary of any applicable requirement(s) that would apply as a result of the change(s). <p>If the proposed emission rate of a new TAP exceeds one or more SQERs and/or contains VOCs or otherwise circumvents an applicable requirement including those established by this Air Discharge Permit, New Source Review shall be required prior to making the proposed change.</p>	Plantwide

2.4 Emission Monitoring and Testing Requirements

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
33.	The Nebraska boiler was initially emission tested on April 9, 2008. Emission testing shall be conducted every two years, no later than the end of April. Emission testing shall be performed in accordance with Appendix A of this Permit. Annual Relative Accuracy Test Audits (RATA) shall be performed no later than the end of the month of the initial emission test in accordance with Appendix B of this Permit.	7
34.	Emission testing of lumber drying operations shall be conducted within one year after achieving maximum intended operation. The kilns began operation on September 15, 2008. Subsequent emission testing shall be conducted on a five year cycle, no later than the end of the calendar month in which the initial emission test was performed. Emission testing shall be performed in accordance with Appendix C of this Permit.	8
35.	The Carothers and Son baghouse was initially emission tested on December 19, 2006. Emission testing of the baghouse shall be conducted every ten years, no later than the end of December in accordance with Appendix D of this Permit.	1

2.5 Reporting Requirements

No.	Reporting Requirements	Equipment/ Activity
36.	An annual emissions inventory report shall be submitted in accordance with SWCAA 400-105(1). Emissions shall be calculated on a 12-month rolling total. In addition to the emissions information required under SWCAA 400-105(1), each annual report shall include an estimate of annual emission quantities for each TAP compound listed in the Technical Support Document for this Permit.	Facilitywide
37.	The 12-month rolling total in tons for NO _x and CO shall be reported monthly.	7
38.	Upset conditions shall be reported to SWCAA as soon as possible after discovery. The permittee may provide notification to SWCAA via telephone. A message may be left on the answering machine for upset conditions that occur outside of normal business hours.	1-8
39.	<p>Excess emissions shall be reported to SWCAA as follows:</p> <ul style="list-style-type: none"> (a) As soon as possible, but no later than 12 hours after discovery for emissions that represent a potential threat to human health or safety; (b) As soon as possible, but no later than 48 hours after discovery for emissions which the permittee wishes to claim as unavoidable pursuant to SWCAA 400-107(1); and (c) No later than 30 days after the end of the month of discovery for all other excess emissions. 	1-8
40.	Deviations from permit conditions shall be reported no later than 30 days after the end of the month during which the deviation is discovered.	1-8
41.	<p>The following operational data shall be reported to SWCAA by September 15 and March 15 for the preceding periods of January to June and July to December, respectively:</p> <ul style="list-style-type: none"> (a) Hours of operation of the Nebraska boiler; (b) Amount of ammonia consumed; (c) Amount, species, average temperature set point and average final moisture of lumber dried in the dry kilns; (d) Hours of operation for the Carothers and Son baghouse; (e) Amount and type of anti-stain consumed; (f) Amount and type of wood byproducts transferred from the facility; (g) Hourly and daily (24-hr) CEMS data for: <ul style="list-style-type: none"> (i) NO_x emission concentration (ppmvd @ 7% O₂) (ii) NO_x emission rate (lb/hr) (iii) CO emission concentration (ppmvd @ 7% O₂) (iv) CO emission rate (lb/hr) (v) O₂ concentration (% O₂) (h) Opacity exceedance reports; (i) The results of all daily CEMS calibrations and quarterly cylinder gas audits; (j) Summary of all deviations from permit requirements; and (k) Summary of facilitywide air pollutant emissions. 	1-8
42.	A grate cleaning schedule for the Nebraska boiler shall be submitted to SWCAA annually by December 31 for the following year.	7
43.	Initial start ups of emission units shall be reported to SWCAA via letter within ten calendar days of start up.	3

No.	Reporting Requirements	Equipment/ Activity
44.	Emission test results shall be reported to SWCAA in writing within 45 calendar days of completion.	7, 8

3. General Provisions

No.	General Provisions
A.	For the purpose of ensuring compliance with this Permit, duly authorized representatives of the Southwest Clean Air Agency shall be permitted access to the permittee's premises and the facilities being constructed, owned, operated and/or maintained by the permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this Permit and applicable regulations and to perform or require such tests as may be deemed necessary.
B.	The provisions, terms and conditions of this Permit shall be deemed to bind the permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the permittee.
C.	The requirements of this Permit shall survive any transfer of ownership of the source or any portion thereof.
D.	This Permit shall be posted conspicuously at or be readily available near the source.
E.	This Permit shall be invalid if construction/installation has not commenced within eighteen months from date of issuance.
F.	This Permit does not supersede requirements of other Agencies with jurisdiction and further, this Permit does not relieve the permittee of any requirements of any other governmental Agency. In addition to this Permit, the permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
G.	Compliance with the terms of this Permit does not relieve the permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Permits, RCW 70.94, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
H.	If any provision of this Permit is held to be invalid, all unaffected provisions of the Permit shall remain in effect and be enforceable.
I.	No change in this Permit shall be made or be effective except as may be specifically set forth by written Permit of the Southwest Clean Air Agency upon written application by the permittee for the relief sought.
J.	The Southwest Clean Air Agency may, in accordance with RCW 70.94 impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this Permit, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

Air Discharge Permit 08-2799R2 - Appendix A
Emission Testing Requirements
Nebraska Boiler

1. Introduction:

The purpose of this testing is to quantify emissions from the Nebraska boiler, and demonstrate compliance with the requirements of this Permit and applicable air quality regulations.

2. Testing Requirements:

- a. **Test plan.** A comprehensive test plan shall be submitted to SWCAA for review and approval at least ten business days prior to each test. SWCAA personnel shall be informed at least five business days prior to testing so that a representative may be present during testing.
- b. **Testing schedule.** Initial testing was completed on April 9, 2008. Emission testing shall be conducted every two years, no later than the end of April.
- c. **Test runs/Reference test methods.** A minimum of three test runs shall be performed for each constituent listed below to ensure the data are representative. Compliance shall be demonstrated by averaging the results of the individual sampling runs. The sampling methods and schedules shall be used unless alternate methods are approved in writing by SWCAA in advance of the emission testing.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test Run Duration</u>
Flow rate, temperature	EPA Methods 1 and 2	N/A
O ₂ , CO ₂ content	EPA Method 3 or 3A	60 minutes
Moisture content	EPA Method 4	60 minutes
PM (filterable)	EPA Method 5	60 minutes
PM (condensable)	EPA Method 202	60 minutes
NO _x	EPA Method 7E	60 minutes
CO	EPA Method 10	60 minutes
Ammonia (NH ₃)	BAAQMD ST-1B	30 minutes
VOC (initial test only)	EPA Method 25A	60 minutes
SO ₂ (initial test only)	EPA Method 6C	60 minutes
Opacity	SWCAA Method 9	6 minutes

3. Source Operation:

- a. **Source operations.** Source operations during the emission test must be representative of maximum intended operating conditions.

Air Discharge Permit 08-2799R2 - Appendix A
Emission Testing Requirements
Nebraska Boiler

- b. **Record of production parameters.** Production related parameters and equipment operating conditions shall be recorded during emission testing for each run to correlate operating conditions with emissions. Recorded parameters shall, at a minimum, include:
- 1) Boiler steam production rate (lb/hr steam),
 - 2) Boiler firing rate (MMBtu/hr),
 - 3) Ammonia injection rate (gal/hr),
 - 4) Fuel type/mixture description,
 - 5) Process start ups and shutdowns, and
 - 6) Plant adjustments.

All recorded production parameters shall be documented in the test results report.

4. Reporting Requirements:

- a. A final emission test report shall be prepared and submitted to SWCAA within 45 calendar days of test completion and, at a minimum, shall contain the following information:
- (1) Description of the source including manufacturer, model number and design capacity of the equipment, the location of the sample ports or test locations, and stack parameters,
 - (2) Time and date of the test and identification and qualifications of the personnel involved,
 - (3) Summary of results, reported in units and averaging periods consistent with the applicable emissions standard or unit,
 - (4) Summary of control system or equipment operating conditions,
 - (5) Summary of production related parameters,
 - (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
 - (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
 - (8) Copies of field data and example calculations,
 - (9) Chain of custody information,
 - (10) Calibration documentation,
 - (11) Discussion of any abnormalities associated with the results,
 - (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report, and
 - (13) An electronic copy of the test report shall be provided to SWCAA.
- b. All test results shall be corrected to 7% oxygen.

Air Discharge Permit 08-2799R2 - Appendix B
Continuous Emission Monitoring Requirements
Nebraska Boiler

1. Introduction:

- a. The purpose of installing and maintaining continuous emissions monitoring systems (CEMS) for NO_x, O₂, and CO is to demonstrate compliance with the requirements of this Air Discharge Permit.

2. Requirements:

- a. **CO, NO_x and O₂ CEMS.** The permittee shall install and maintain a system for monitoring the concentration and emission rate of CO, NO_x, and O₂ from the hog fuel boiler exhaust stack in accordance with the requirements and specifications found in the following regulations:
- 40 CFR 60, Appendix B - Performance Specification 2 "Specifications and Test Procedures for Sulfur Dioxide and Nitrogen Oxides Continuous Emission Monitoring Systems in Stationary Sources."
 - 40 CFR 60, Appendix B - Performance Specification 3 "Specifications and Test Procedures for Oxygen and Carbon Dioxide Continuous Emission Monitoring Systems in Stationary Sources."
 - 40 CFR 60, Appendix B - Performance Specification 4A "Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources."
 - 40 CFR 60, Appendix F - Procedure 3 "Quality Assurance Procedures."

Relative Accuracy Test Audits (RATAs) shall be conducted at least once for every four calendar quarters.

- b. **RATA Reports.** Relative accuracy test audit reports shall be submitted to SWCAA within 45 days of test completion. An electronic copy of the test/RATA report shall be provided to SWCAA.

Air Discharge Permit 08-2799R2 - Appendix C**Page 1 of 3****Emission Testing Requirements****Lumber Drying****1. Introduction:**

The purpose of this testing is to quantify emissions from lumber drying operations described in this Permit.

2. Testing Requirements:

- a. **Testing schedule.** Emission testing of the lumber drying process shall be conducted within one year after achieving maximum intended operation. The kilns began operation on September 15, 2008. Subsequent emission testing shall be conducted on a five year cycle, no later than the end of the calendar month in which the initial emission test was performed. Unless otherwise directed by SWCAA, the testing shall be conducted on the dominant species dried at the facility.
- b. **Test plan.** A comprehensive test plan shall be submitted to SWCAA for review and approval at least ten business days prior to each test. SWCAA personnel shall be informed at least five business days prior to testing so that a representative may be present during testing.
- c. **Test runs/Reference test methods.** The sampling methods identified below shall be used unless alternate methods are approved in writing by SWCAA in advance of the emission testing.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test¹ Run Duration</u>
Exhaust Flow	EPA Methods 1-4	N/A
Volatile organic compounds ²	EPA Method 25A / 18 or 320	N/A
Methanol	NCASI Method 105	N/A
Ethanol	NCASI Method 105	N/A
Formaldehyde	NCASI Method 105	N/A
Acetaldehyde	NCASI Method 105	N/A
Acrolein	NCASI Method 105	N/A
Propionaldehyde	NCASI Method 105	N/A
Acetic Acid	NCASI Method 105 ³	N/A
Mono Turpenes	EPA Method 18	N/A

¹ Test duration will be as necessary to yield representative results. In some cases, multiple test runs will be conducted over the drying cycle.

² The purpose of the testing is to quantify actual VOC emissions. This might involve developing an appropriate scaling factor for Method 25A results, or quantifying the individual components of the kiln exhaust without performing Method 25A.

³ Acetic acid may be collected in the NCASI Method 105 impinger train and analyzed by HPLC.

Air Discharge Permit 08-2799R2 - Appendix C**Emission Testing Requirements****Lumber Drying****3. Kiln Operation:**

- a. **Quality assurance.** The following quality assurance measures shall be met unless otherwise approved by SWCAA in advance of the testing:
- (1) The lumber used for the source test shall be preserved in a manner to assure the freshness of the lumber. The lumber shall be wrapped in plastic wrap or some other material to prevent off-gassing and contamination during storage and shipment;
 - (2) The log(s) from which lumber is taken should be newly arrived to the lumber yard;
 - (3) The lumber shall be maintained below 45°F if the lumber is stored for more than two but less than seven days prior to the commencement of testing;
 - (4) The lumber shall be maintained below 10°F if stored for seven or more days prior to testing.
 - (5) The ends of each test board shall be trimmed prior to testing;
 - (6) The kiln shall be operated as close as practical to the dominant drying schedule (dry bulb and wet bulb temperatures) at the subject facility for the wood species being tested; and
 - (7) The wood samples shall be dried to a moisture content at or below the moisture content targeted by the subject facility.
- b. **Record of testing parameters.** Production related parameters and equipment operating conditions shall be recorded during emissions testing to correlate operating conditions with emissions. Recorded parameters shall include the following if reasonably attainable:
- (1) Testing kiln details including: kiln dimensions, kiln air velocity, and heating method;
 - (2) Sample size (board feet), sample weight, and lumber size (2" x 4", 4" x 8", etc.);
 - (3) Drying time;
 - (4) Wood moisture content (initial and final);
 - (5) Temperature (continuously monitored and recorded wet bulb and dry bulb temperatures);
 - (6) Lumber information including: percentage of heartwood vs. sapwood, ring count, percentage of face area that consists of knots, etc.;
 - (7) Tree information: coastal or inland tree, tree age, approximate date harvested, if log was stored in fresh or salt water, etc.; and
 - (8) Any interruptions in kiln operation.

All recorded production parameters shall be documented in the test results report.

4. Reporting Requirements:

- a. A final emission test report shall be prepared and submitted to SWCAA within 45 calendar days of test completion. Each report shall be provided in an electronic format acceptable to SWCAA and as a hard (paper) copy. Each report shall include:
- (1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations;
 - (2) Time and date of the test and identification and qualifications of the personnel involved;
 - (3) Summary of results, reported in units and averaging periods consistent with the application emissions standard or unit;

Air Discharge Permit 08-2799R2 - Appendix C**Emission Testing Requirements****Lumber Drying****4. Reporting Requirements: (con't)**

- (4) Summary of control system or equipment operating conditions;
 - (5) Summary of production related parameters;
 - (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation;
 - (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation;
 - (8) Copies of field data and example calculations;
 - (9) Chain of custody information;
 - (10) Calibration documentation;
 - (11) Discussion of any abnormalities associated with the results; and
 - (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.
- b. VOC emissions shall be reported in pounds per thousand board feet (lb/Mbf) as VOC. Emissions of each VOC species quantified during the test shall be reported in units of lb/Mbf as the individual species. For the purposes of reporting total VOC emissions, the unspciated fraction of the VOC emissions shall be assumed to be mono turpenes ($C_{10}H_{16}$).

**Emission Testing Requirements
Carothers and Son Baghouse****1. Introduction:**

The purpose of this testing is to quantify emissions from this baghouse and to demonstrate compliance with the requirements of this Permit and applicable air quality regulations.

2. Testing Requirements:

- a. **Test plan.** A comprehensive test plan shall be submitted to SWCAA for review and approval at least ten business days prior to each test. SWCAA personnel shall be informed at least five business days prior to testing so that a representative may be present during testing.
- b. **Testing schedule.** Initial testing was completed on December 19, 2006. Emission testing shall be conducted every ten years thereafter, no later than the end of December.
- c. **Test runs/Reference test methods.** A minimum of three (3) test runs at maximum operating conditions for a minimum of one hour shall be performed for each constituent listed below to ensure the data are representative. Compliance shall be demonstrated by averaging the results of the individual sampling runs. The sampling methods and schedules shall be used unless alternate methods/schedules are approved in writing by SWCAA in advance of the emission testing.

<u>Constituent</u>	<u>Reference Test Method</u>	<u>Minimum Test Run Duration</u>
PM (filterable)	EPA Method 5	60 minutes
Opacity	SWCAA Method 9	15 minutes

3. Source Operation:

- a. **Source operations.** Source operations during the emissions test must be representative of maximum intended operating conditions.
- b. **Record of production parameters.** Production related parameters and equipment operating conditions shall be recorded during emissions testing to correlate operating conditions with emissions. Recorded parameters shall, at a minimum, include process start ups and shutdowns, baghouse pressure drop and plant adjustments. All recorded production parameters shall be documented in the test results report.

4. Reporting Requirements:

- a. A final emission test report shall be prepared and submitted to SWCAA within 45 calendar days of test completion and, at a minimum, shall contain the following information:
 - (1) Description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations,
 - (2) Time and date of the test and identification and qualifications of the personnel involved,
 - (3) Summary of results, reported in units and averaging periods consistent with the application emissions standard or unit,
 - (4) Summary of control system or equipment operating conditions,

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Emission Testing Requirements
Carothers and Son Baghouse

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4. Reporting Requirements: (con't)

- (5) Summary of production related parameters,
- (6) A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation,
- (7) A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation,
- (8) Copies of field data and example calculations,
- (9) Chain of custody information,
- (10) Calibration documentation,
- (11) Discussion of any abnormalities associated with the results,
- (12) A statement signed by the senior management official of the testing firm certifying the validity of the source test report, and
- (13) An electronic copy of the test report shall be provided to SWCAA.
- (14) Results shall be reported as measured with no O₂ correction.